United States Patent [19]

From-Morgan & Finnegan LLP

Menard et al.

Patent Number:

5,807,518

Date of Patent:

Sep. 15, 1998

[54]	FRICTION MATERIAL DESIGNED FOR FITTING TO A DEVICE EMPLOYING FRICTION IN A LIQUID MEDIUM, AND THE METHOD OF PRODUCING SUCH A
	FRICTION MATERIAL AND THE DEVICE TO WHICH IT IS FITTED

[76] Inventors. Denis Menard, 90 Avenue E. Ruben, 87000 Lunoges, Jean-Pierre Boutaud, 12 rue lutes Vallés, 87350 Panazol, Richard Guerin, 14 rue Henri Laforest, 61100 Flors, Gérard Jacq, La Foucaudière, 61430 Athis De L'Orne, all of France

553,573 [21] Appl No

[22] PCT Filed Mar. 6, 1995

[86] PCT No.: PCT/FR95/00320 Nav. 27, 1995

§ 371 Dalu: § 102(e) Date: Nov. 27, 1995

[87] PCT Pub. No: WO95/26473

PCT Pub. Date: Oct. 5, 1995

Foreign Application Priority Data [30] Mar 25, 1994 [I'K] I-rance

121	Int. Cl.	Libis 02/05' facti 1/40
1521	U.S. C)	264/258, 264/259, 264/297.4;
	•	150/184; 156/242, 156/250; 156/305
1581	Field of Search	442/60, 59, 374,

442/375, 376, 380, 388, 391, 392, 428/66 2, 523/149, 152, 153, 155, 157, 158, 159, 2/107, 156/184, 242, 250, 305, 227, 264/258, 259, 297.4, 188/251 A, 192/107 M

[56]

References Cited

U.S. PATENT DOCUMENTS

2,730,797 2/1956 Almon et al. .

3,930,552	2/1976	Knapp et al	428/64
3.971.669		Wizmen et al	156/148
4,130,537	12/1978	Bobres	260/38
4.369.263		Material	
4 374 211	2/1983	Gailagher et al	523/150
4 743 043		Royer	
4 775 705			\$23/153
4,785,029		Honma ct al	523/153
4.790,052	12/1988	Olry	28/11u
4 830,507		Yang	264/143
4,801,809	8/1989	Ogawa ct al	523/149
4,895,882	1/1990	Ango et al	523/145
5,273,819	12/1993	Jea	428/297
5,304,225	4/1994	Gardziella et al	51/298

FOREIGN PATENT DOCUMENTS

0 223 642	10/1985	European Par On
() 451 320 A2	10/1991	European Pat Off .
0 530 743 AT	3,1993	European Pat Off
2935205 A 1	4/1991	Cremins
3231510 A 1	2/1994	Germany
PO1803	5/1948	United Капулон
742043	12/1955	United Kingdori

OTHER PUBLICATIONS

JP910071291/92-410457 Derwent abutaci, 29 Oct. 1992 International Search Report, 28 Jun. 1995

Prunary Exmainer-Kathteen Choi Attorney, Agent, or Firm-Morgan & Finneyan, L.L.P.

ABSTRACT

A friction material for a liquid medium consists of a flore mat impregnated with a thermosetting resin, the fibres having a length of at least 12 mm. The method of producing such a material includes the steps of providing a mixture of fibres, carding the mixture to form a card web, lapping the card web, needing the lapped card web for form a needled may and impregnanting the needled may with a thermoseuting resia

6 Claims, 4 Brawing Sheets

94 03518

THEN SOURT DOUBLESON